

WHAT IS CLAIMED IS:

1. An electric motor-driven power steering apparatus comprising:

a steering system;

a bridge circuit;

a power source for connecting between input terminals of the bridge circuit; and

an electric motor for connecting between output terminals of the bridge circuit, wherein:

the bridge circuit energizes the electric motor and operates electric motor power to the steering system; and

the bridge circuit includes predetermined number of arms having connecting circuits for connecting switching elements in parallel with diodes in series so that the diodes mutually become reverse polarity.

2. The electric motor-driven power steering apparatus according to claim 1, wherein:

the electric motor is a DC motor;

the bridge circuit includes four arms and ON driving of one of the opposite arms is performed;

PWM driving of the other of the opposite arms is performed;
and

the arms in which the ON driving is performed include

connecting circuits for connecting switching elements in parallel with diodes in series so that the diodes mutually become reverse polarity.

3. The electric motor-driven power steering apparatus according to claim 1, wherein

the electric motor is a DC motor and the bridge circuit includes four arms and all the arms include connecting circuits for connecting switching elements in parallel with diodes in series so that the diodes mutually become reverse polarity.

4. The electric motor-driven power steering apparatus according to claim 1, wherein

the electric motor is a three-phase motor and the bridge circuit includes six arms and all the arms include connecting circuits for connecting switching elements in parallel with diodes in series so that the diodes mutually become reverse polarity.

5. The electric motor-driven power steering apparatus according to claim 1, further comprising

an capacitor for noise elimination, wherein

at least one end of the capacitor is connected to a connection point for connecting circuits for connecting switching elements in parallel with diodes in series so that

the diodes mutually become reverse polarity.

6. . The electric motor-driven power steering apparatus according to claim 1, wherein

the switching element is a field-effect transistor and the diode connected in parallel is a parasitic diode of the field-effect transistor.